## REMARKS

This paper is submitted in response to the Office Action mailed May 27, 2003. Claims 1-13 are pending. Claims 1, 9 and 11 have been amended. Support for the amendments can be found throughout the specification and claims as originally filed. There is no new matter added as a consequence of the amendments to the claims.

The Rejection under 35 U.S.C. § 112, Second Paragraph Should Be Withdrawn

Claims 1 and 9 have been rejected as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicants regard as the invention. Specifically, the Examiner indicates that the molecular weight is indefinite for not specifying a particular molecular weight such as a number average molecular weight or weight average molecular weight.

Claims 1 and 9 have been amended to specify the molecular weight as "number average molecular weight." The molecular weight of the diene elastomer is determined by using osmometry which is known in the art to determine number average molecular weight. Support for the amendment to the claims can be found in the specification in the examples and detailed description (page 28, paragraph 99, line 6; page 29, paragraph 102, line 6; page 31, paragraph 113, line 6; page 23, paragraph 89, line 5).

The Present Invention Is Not Anticipated by US 4,158,654 (Moczygemba et al.)

Claims 1-4 are rejected under 35 U.S.C. § 102(a) as allegedly anticipated by US 4,158,654, Moczygemba et al. ("Moczygemba"). The Examiner alleges that Moczygemba

teaches the rubber composition of the present invention.

Applicants respectfully traverse this rejection. For a claim to be anticipated by a reference, "there must be no difference between the claimed invention and the reference disclosure, as viewed by a person of ordinary skill in the field of the invention." *Scripps Clinic & Research Foundation v. Genentech, Inc.*, 927 F.2d 1565 18 U.S.P.Q.2d 1001 (Fed. Cir. 1991). Moreover, a claim is anticipated and fails to meet the requirement of §102 only when a single prior art reference discloses each and every element of the claimed invention. *Lewmar Marine, Inc. v. Barient*, 3 U.S.P.Q.2d 1766 (Fed. Cir. 1987), emphasis added.

Moczygemba does not teach the rubber composition of the present invention. The present invention discloses a rubber composition comprising an elastomeric matrix and a reinforcing filler comprising a reinforcing inorganic filler. The elastomeric matrix comprises a diene elastomer having a number average molecular weight greater than 80,000 g/mol in a majority quantity of the elastomeric matrix. In contrast, Moczygemba discloses a rubber-containing composition comprising (1) an unsaturated polyester, (2) a carboxylate-containing rubber, (3) a carboxylic acid, (4) a vinyl monomer, (5) a catalyst, and (6) a reinforcing agent. The rubber is present in an amount from 10 to 50 percent, more preferably 30 percent, of the weight of the total weight of rubber and monomer, indicating that the rubber is not in a majority proportion of the composition or the vinyl monomer solution of the composition. In fact, the composition highlighted by the Examiner, e.g. in Recipe I, contains rubber in only 10.4 to 13.0 parts by weight, which is not a majority proportion of the composition or vinyl monomer solution. Thus, Moczygemba fails to teach the presently claimed proportion of diene elastomer of the elastomeric matrix.

In addition, the Examiner appears to allege that the glass fibers disclosed by Moczygemba are equivalent to the reinforcing inorganic filler of the present invention. Applicants disagree and submit that glass fibers cannot be used as the reinforcing inorganic filler of the present invention, since glass fibers do not have the substantial ability to disagglomerate and disperse in the elastomeric matrix. (See present specification, page 15, paragraph 63). Thus, for this additional reason, applicants submit that Moczygemba does not teach the presently claimed invention.

Since Moczygemba fails to disclose a diene elastomer comprising a majority proportion of elastomer in matrix and the reinforcing inorganic filler of the present invention, applicants submit that Moczygemba does not teach each and every element of the claimed invention. Thus, Moczygemba cannot anticipate the presently claimed invention. Applicants respectfully request the withdrawal of the rejection of claims 1-4 under 35 U.S.C. § 102(a).

The Present Invention Is Patentable Over US 4,158,654 (Moczygemba et al.)

Claims 1-8 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Moczygemba in view of US 5,489,627, Sandstrom or US 5,962,575, Yatsuyanagi et al. ("Yatsuyanagi"). In the Office Action, the Examiner appears to indicate that the present invention recites a reinforcing silica, carbon black having a surface modified by silica and a bonding agent not recited in Moczygemba. The Examiner alleges that the use of reinforcing silica, carbon black having a surface modified by silica and a bonding agent in rubber compositions to improve physical properties and enhance compatibility of a rubber filler is well known in the art as taught by Sandstrom and Yatsuyanagi. The Examiner further alleges that it

would have been obvious to one of skill in the art to utilize the allegedly well known reinforcing silica, carbon black having a surface modified by silica and reinforcing agents and carbon black, since the use of additives in rubber compositions in order to improve physical properties and enhance compatibility of a rubber and filler is allegedly well known in the art. Applicants respectfully traverse the rejection.

Moczygemba is primarily concerned with the use of carboxylic acid in a vinyl monomer solution of an alkali metal carboxylate-containing polymer, causing viscosity of the solution to be relatively low. As acknowledged by the Examiner, there is no teaching of the use of reinforcing silica, carbon black having a surface modified by silica and a bonding agent in Moczygemba. Thus, Moczygemba fails to disclose each and every limitation of the presently claimed invention.

Furthermore, Moczygemba does not teach or suggest to one of skill in the art of the need to improve physical properties and enhance the compatibility of the disclosed composition. Since Moczygemba does not apprise the skilled artisan of the need to modify the disclosed composition, there is no suggestion or motivation to combine Moczygemba with either Yatsuyanagi or Sandstrom. Without the suggestion or motivation to combine, there is no reasonable expectation of success.

Applicants disagree with the Examiner's contention that it is well known in the art to use reinforcing silica, or carbon black having a surface modified by silica and a bonding agent in rubber compositions to improve physical properties and enhance compatibility of a rubber composition. Because Yatsuyanagi discloses only carbon black as the reinforcing filler, the skilled artisan would not have combined the disclosures of Moczygemba and Yatsuyanagi. One

of skill in the art is well aware that there is no improvement of physical properties demonstrated when carboxylated containing polymers are used together with carbon black in a majority as a filler. In fact, the Mooney viscosity of the compound increases. Thus, applicants submit that there is no motivation to combine Moczygemba with Yatsuyanagi.

Furthermore, even if Moczygemba were to be combined with Yatsuyanagi, one would not produce the presently claimed composition. As indicated above, Moczygemba fails to disclose a diene elastomer comprising the reinforcing inorganic filler of the present invention. This deficiency is not cured by the carbon black of Yatsuyanagi. Yatsuyanagi merely discloses a carbon black that is modified with a small amount of silica (Yatsuyanagi, col.3, 15-18). This type of carbon black is not a reinforcing inorganic filler, such as the silica disclosed in the present invention. Thus, the combination of Moczygemba with Yatsuyanagi would not render the present invention obvious.

For the foregoing reasons, applicants submit that claims 1-8 are patentable over Moczygemba in view of Yatsuyanagi or Sandstrom. Applicants respectfully request withdrawal of the rejection of claims 1-8.

The Present Invention Is Not Anticipated By US 3,135,716 (Uranek et al.)

Claims 1-4, 10 and 12 are rejected under 35 U.S.C. § 102(b) as allegedly anticipated by US 3,135,716 to Uranek et al. ("Uranek"). The Examiner alleges that Uranek teaches carbon black reinforced rubber containing an antioxidant. The Examiner alleges that Uranek also discloses a COOH terminated rubber having a molecular weight of 150,000 and the application

of the rubber in molded articles such as tires. In addition, the Examiner also alleges that the reference teaches various rubbers such as polybutadiene and copolymer with styrene.

Uranek fails to teach the rubber composition of the present invention. Uranek provides a terminally reactive polymeric composition comprising carbon black as the reinforcing filler, but fails to teach a reinforcing inorganic filler. In contrast, the presently claimed composition recites, *inter alia*, a reinforcing inorganic filler. Thus, Uranek fails to teach each and every element of the presently claimed invention. As a result, Uranek does not anticipate the presently claimed invention. Applicants respectfully request the withdrawal of the rejection of claims 1-4, 10 and 12 under 35 U.S.C. § 102(b).

The Present Invention Is Patentable Over US 3,135,716 (Uranek et al.)

Claims 1-4, 10 and 12 are rejected under 35 U.S.C. § 103(a) as allegedly obvious over Uranek. Since Uranek fails to teach all the presently claimed limitations of claims 1-4, 10 and 12, as stated above, the claims are not rendered obvious over Uranek. Applicants respectfully request the withdrawal of the rejection of claims 1-4, 10 and 12 under 35 U.S.C. § 103(a).

In addition, claims 1-8 and 10-13 are rejected under 35 U.S.C. § 103(a) as allegedly obvious over Uranek, in view of Sandstrom or Yatsuyanagi. In the Office Action, the Examiner appears to indicate that the present invention recites a reinforcing silica, carbon black having a surface modified by silica and a bonding agent not taught by Uranek. The Examiner alleges that the use of reinforcing silica, or carbon black having a surface modified by silica and a bonding agent in rubber compositions in order to improve physical properties and enhance compatibility of a rubber and filler is well known in the art as taught by Sandstrom and Yatsuyanagi. With

regard to claims 11 and 13, the Office Action indicates that an invention in a product-by-process claim is a product and not a process. Applicants respectfully traverse the rejections.

Uranek does not teach or suggest to one of skill in the art of the need to improve physical properties and enhance the compatibility of the disclosed composition. Uranek does not apprise the skilled artisan of the need to modify the disclosed composition. In addition, Uranek teaches a terminally reactive polymeric composition comprising carbon black as the reinforcing filler and the present invention discloses a diene elastomer which comprises a carboxylic acid function at its two chain ends. One of skill in the art is well aware that there is no improvement of physical properties demonstrated when carboxylated containing polymers are used together with carbon black in a majority as a filler. Thus, there is no suggestion or motivation to combine Uranek with either Yatsuyanagi or Sandstrom. Without the suggestion or motivation to combine, there is no reasonable expectation of success.

Furthermore, even if the disclosure Uranek were to be combined with Yatsuyanagi, one would not obtain the presently claimed composition. As indicated above, Uranek fails to disclose a diene elastomer comprising a reinforcing inorganic filler of the present invention. This deficiency is not cured by Yatsuyanagi, which also does not disclose a reinforcing inorganic filler. Thus, the combination of Uranek with Yatsuyanagi would not render the present invention obvious. Therefore, the cited art, alone or in combination, fails to teach each and every limitation of the presently claimed invention.

With regard to claims 11 and 13, applicants have amended claim 11 to be a product-by process claim, which now correctly depends from process claim 9.

For the foregoing reasons, applicants submit that claims 1-8 and 10-13 are patentable over Uranek, in view of Sandstrom or Yatsuyanagi. Applicants respectfully request the withdrawal of the rejection of the claims under 35 U.S.C. § 103(a).

Allowable Subject Matter

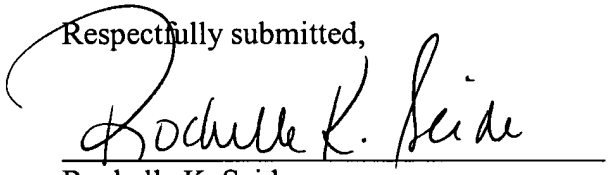
The Examiner has indicated that claim 9 would allowable if rewritten or amended to overcome the rejections under 35 U.S.C. § 112, second paragraph. Claim 9 has been amended as requested by the Examiner. Applicants respectfully submit that claim 9 is allowable.

## CONCLUSION

In view of the foregoing amendments and remarks, Applicants respectfully request withdrawal of the outstanding rejections and allowance of the pending claims.

Applicants request a three month extension of time and encloses herewith the requisite fee as set forth in 37 C.F.R. § 1.17(a)(3). Applicants do not believe that any additional fee is required in connection with the submission of this document. However, should any fee be required, or if any overpayment has been made, the Commissioner is hereby authorized to charge any fees, or credit or any overpayments made, to Deposit Account 02-4377. A duplicate copy of this sheet is enclosed.

Respectfully submitted,



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